Remarks

Applicants will address the Examiner's remarks in the order presented by the Examiner in the Office Action mailed April 29, 2003.

Claim Objections

The Examiner has requested that claims 3 and 4 be amended to place the claims in proper dependent format. The Examiner will note that these claims no longer depend from claim 2, and have been amended to depend from claim1.

The Examiner will note that claim 15 has been cancelled.

Claim Rejections-35 U.S.C. § 112, First Paragraph

Applicants acknowledge the Examiner's withdrawal of claims 10 and 11 as not being enabled under 35 U.S.C. § 112, First Paragraph.

Claims 1, 2, 3, 4, 6, 7, 9, 10 and 11 are rejected under 35 U.S.C.§ 112, first paragraph, as based on a disclosure, which is not enabling. Specifically, the Examiner has suggested that is rejection could be overcome by including in claim 1 that the "heterologous gene" is "operably linked" to the E1B promoter. Applicants have made the amendment.

Claim Rejections-35 U.S.C.§ 112, Second Paragraph

Applicants acknowledge the Examiner's withdrawal of the rejection of claims 2, 3, 4, 5, 6, and 11 under 35 U.S.C. § 112, Second Paragraph.

Claims 1, 2, 3, 4, 6, 7, 8, 9, 10 and 11 are rejected under 35 U.S.C.§ 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner has stated that it is not clear what the "temporal expression" language in the claims refers to. The Applicants have amended the claims to recite that the heterologous gene

has a similar temporal expression pattern as the deleted E1b region gene. Specifically, Applicants have deleted "that" on line 3, and substituted it with "...such that the heterologous gene..." Applicants believe that this clarifying language should obviate the rejection.

Claim Rejections-35 U.S.C. § 102

Claims 1, 6, 7, 9, 10, 11, 14 and 15 remain rejected under 35 U.S.C. § 102(e) as being anticipated by Bischoff (US Patent No. 6, 080, 578). As discussed in a previous response, Bischoff et al teach adenovirus constructs that have a "...deletion or point mutation, in the E1a and/or E1b gene regions, especially in the sequences encoding the E1b p55k protein..." (Column 4, lines37-39). In this regard, the Examiner will note that Applicants have amended their claims to recite that the claimed adenoviral vectors comprise a deletion which in claim 1 consist of a portion of the 55K gene ***AND*** a second E1b gene. Further, claim 4 claims an adenoviral vector with the three E1b region genes deleted.

The Examiner will note that the language recited in claim 1, "at least a portion of the E1b 55K region gene," is supported on page 15, line 2, of Applicants' specification.

Since Bishop et al do not show a deletion in E1b consisting of either a portion of the 55K gene AND a second E1b gene, or the three E1b region genes deleted, it is respectfully submitted that these claims should be allowable.

Claim Rejections-35 U.S.C. § 103

Applicants acknowledge the Examiner's withdrawal of Claims 1, 2, 4, 7, 14 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Bischoff taken with Amalfitano.

Claims 1, 5, 6, 7, 8, 9, 10, 11, 12, 13 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Bischoff (US Patent No. 6, 080, 578) taken with Garcia-Sanchez et al.

In light of the amendments discussed above wherein the deletions to the E1b region consists of either a portion of the 55K gene AND a second E1b gene, or the three E1b region genes, it is submitted that the 103 rejection is no longer applicable. Bischoff

et al neither show nor suggest an adenoviral vector as now claimed. Applicants request that the rejection be withdrawn.

If the Examiner believes that an interview would expedite the prosecution of Applicants' patent application, the Examiner is encouraged to call the undersigned.

A Petition for Three Month extension of time is being filed concurrently with this response.

The Commissioner is authorized to charge any fees associated with this communication to Deposit Account No. 15-0615 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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Appendix
Amended Claims
(version with markings to show changes made)

Claim 1 A recombinant adenoviral vector comprising a deletion in the E1b region, said deletion comprising ~~of~~ at least a portion of the ~~one~~ E1b 55K region gene and an E1b region gene selected from the group consisting of p19 or pIX, but retaining the E1b promoter, and substituting for said deletion ~~E1b region gene~~ a heterologous gene such that the heterologous gene has a similar temporal expression pattern as ~~that has a similar temporal expression pattern of~~ the deleted E1b region gene, and said heterologous gene having the further property of encoding a protein that has anti-tumor activity and that is operably linked to said E1b promoter.

Claim 2 The adenoviral vector as described in claim 1 ~~or 15~~ wherein said deletion of said E1b region genes ~~comprises~~ consists of said p19 ~~, 55K, and pIX~~] genes.

Claim 3 The adenoviral vector as described in claim ~~2~~ 1 wherein said deletion of said E1b region genes ~~comprises~~ consists of the p19 and ~~55K~~ pIX genes.

Claim 4 The adenoviral vector as described in claim ~~2~~ 1 wherein said deletion in the E1b region further comprises E1b 55K, p19, and pIX genes ~~of said E1b region genes comprises the pIX gene~~.

Claim 5 A recombinant adenoviral vector selected from the group consisting of ΔKmTNF, ΔE1B/CD and Δ55K/CD.

Claim 6. The recombinant adenoviral vector as described in

claim 1 ~~or 15~~ wherein said heterologous gene encodes a protein selected from the group consisting of tumor necrosis factor alpha, interferon gamma, an interleukin, a cell suicide protein, cytosine deaminase, thymidine kinase and mip-3.

Claim 7. Cells comprising said adenoviral vectors of claim 1 ~~or 15~~.

Claim 8 (original): Cells comprising said adenoviral vectors of claim 5.

Claim 9 (original): Cells comprising said adenoviral vectors of claim 6.

Claim 10. A method for directly treating a mammal's neoplastic condition in a mammal in need of said treatment, comprising administering to said mammal a therapeutically effective dose of said adenoviral vectors of claims 1, 5, or 6 ~~or 15~~.

Claim 11. The method as described in claim 10 further comprising administering with said adenoviral vectors a chemotherapeutic or an immunosuppressive agent.

Claim 12. A replication competent, recombinant adenovirus selected from the group consisting of ΔKmTNF, ΔE1B/CD and Δ55K/CD.

Claim 13. A recombinant plasmid selected from the group consisting of pΔKmTNF, pΔE1B/CD, and pΔ55K/CD.

Claim 14. A recombinant plasmid selected from the group consisting of pΔE1B, pΔE1B/55K, and pΔE1B/pIX.

Claim 15. Please cancel